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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/534,494	05/10/2005	Andrew C. Lewin	1241116	4705

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EXAMINER	
LEE, PATRICK J	

ART UNIT	PAPER NUMBER
2878	

MAIL DATE	DELIVERY MODE
08/27/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/534,494	LEWIN ET AL.	
	Examiner	Art Unit	
	Patrick J. Lee	2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 June 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9 and 11-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9 and 11-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 December 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *04172007*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-9 & 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,726,443 to Immega et al ("Immega").

With respect to claim 1, Immega discloses a proximity sensor comprising: light source (35) with mask (3) to form an illumination means for illuminating a object (6) as a scene with an array of spots of light as shown by light pathways (34a); a plurality of sensors (1) as a detector arranged to receive light reflect from scene (6); and mask (3) as a mask located in the optical path of light from the scene (6) to the detector (1) with both transmissive and non-transmissive portions. The mask is such that light from the distance that corresponds to light pathway (34b) would be transmitted through the mask to the detector and that light which is not within the pathway (34b) would not be transmitted through the mask to the detector. Immega discloses the light source (35) to be arranged to illuminate part of the input face of mask (3) as a light guide, where the mask (3) has a series of tubes. Immega does not explicitly disclose the portion of the mask (3) in light path (34a) to have substantially reflective sides, but reflective sides would be known in the art and would have been obvious to one of ordinary skill in the art because the substantially reflective sides would allow for light that would be normally

absorbed by the mask to be incident on the object (6) and result in greater efficiency. Immega also does not explicitly disclose the use of projection optics, but projection optics would be known in the art and obvious to one of ordinary skill in the art because the projection optics would allow for a focused set of images.

With respect to claims 2-3, the modified Immega discloses the mask arranged such that reflected light is transmitted to the detector if the target is within a predetermined distance of the sensor that correspond to the light paths (34b). Light that would not be along the light path (34b) would thus be outside the predetermined distance and thus not transmitted.

With respect to claim 4, the modified Immega discloses the use of infrared light (see column 15, lines 23-25).

With respect to claim 3, the modified Immega et al does not explicitly disclose the mask transmitting light reflected from a target more than a predetermined distance away and not transmit light from within the predetermined distance, but such would have been obvious to one of ordinary skill in the art because the location of the object (7) too close to the mask (3) could lead to light from sources (12, 33, 35, 41, 59) striking object (7) at such a sharp angle that most of the reflected light is incident on the opaque portions (71) of mask (3) or misses the mask (3) altogether.

With respect to claim 4, the modified Immega et al disclose the use of infrared sources (see Immega et al column 14, lines 48-52; column 15, lines 23-27).

With respect to claim 5, the modified Immega disclose color filters (15) applied to detectors (1), such that only light of a predetermined frequency or wavelength would

impinge detector (1), but the modified Immega does not explicitly disclose the modulation of illumination means (12, 33, 35, 41, 59) and the modulation of a detector with a filter. Modulation of the illumination means is known in the art and would have been obvious to one of ordinary skill in the art because such would allow the device to monitor what is being emitted by the illumination means and prevent erroneous detection of ambient radiation by the detector. Such modifications would harmonize the operation of the different elements of the device.

With respect to claim 6, the modified Immega discloses the device as described in the previous claims. However, the receiving of ambient light is not explicitly disclosed, but correction for radiation is known in the art and would have been obvious to one of ordinary skill in the art because ambient radiation can adversely affect the operation of the device by leading to false detections.

With respect to claim 7, while the modified Immega does not explicitly disclose the mask (3) transmitting a different amount of reflected light in each distance range, the modified Immega et al does disclose the range of the device (see column 18, lines 42-63). However, the transmission of different amounts of light in each distance range would be inherent from the device due to the length and width of the holes within mask (3) because if an object is located too far away, there will only be a small window in which the reflected light can fit such that the reflected light is incident on detector (1), while if the object is closer, there will be a greater window and thus a higher possibility that a greater amount of light would be incident on detector (1).

With respect to claim 8, the modified Immega disclose color filters (15) applied to detectors (1), such that only light of a predetermined frequency or wavelength would impinge detector (1), but the modified Immega does not explicitly disclose the modulation of illumination means (12, 33, 35, 41, 59). However, the modulation of the illumination means is known in the art and would have been obvious to one of ordinary skill in the art because such would allow the device to monitor what is being emitted by the illumination means and prevent erroneous detection of ambient radiation.

With respect to claim 9, the modified Immega disclose mask (3) to have holes as transmissive windows and a substantially occluding portion as a substantially non-transmitting material. Such characteristics of the mask are illustrated in Immega Figure 20 with opaque regions (71) as the substantially non-transmitting material.

With respect to claim 11, the modified Immega illustrate the light guide to comprise a tube with a square cross section.

With respect to claim 12, the modified Immega discloses the device as described in the discussion of the previous claims. While the modified Immega does not explicitly disclose the use of a hollow tube with reflective internal surfaces, the use of hollow tubes is known in the art and would have been obvious to one of ordinary skill in the art because such would allow the disposition of a plurality of light emitting sources.

With respect to claim 13, the modified Immega illustrates the tube to comprise solid material such that a substantial amount of light incident at interface undergoes total internal reflection through optical pathway (80).

With respect to claims 14-15, the modified Immega discloses the device as described in the discussion of the previous claims. However, the use of LEDs is not explicitly disclosed, but the use of LEDs is known in the art and would have been obvious to one of ordinary skill in the art because LEDs provide the necessary illumination at a relatively reasonable cost.

Response to Arguments

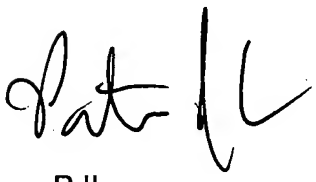
3. Applicant's arguments with respect to claims 1-9 & 11-15 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick J. Lee whose telephone number is (571) 272-2440. The examiner can normally be reached on Monday through Friday, 8:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on (571) 272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



PJL
August 22, 2007

Patrick J. Lee
Examiner
Art Unit 2878